

**REMARKS**

Claims 27-34 and 63-66 are pending. Applicants respectfully acknowledge the Examiner's indication that claims 27-31, 34 and 63-66 are allowed. By this response, Applicants have amended claim 32. No new matter has been added.

In the Office Action, the Examiner objected to the title of the invention, as not clearly indicative of the invention. Although Applicants do not agree that the title is not descriptive of the claimed invention, Applicants have amended the title to "Fiber Optic Sensing Systems and Method of Use Thereof." Applicants believe that this title is descriptive of the invention, as claim 27 is directed to a fiber optic sensing system and claim 34 is directed to a method of sensing.

In the Office Action, the Examiner rejected claim 32 under 35 USC § 102(b) as being anticipated by Youngquist et al. (US Patent No. 4,818,064) and claim 33 under 35 USC § 103(a) as being unpatentable over Youngquist in view of Kersey et al. (US Patent No. 5,361,130). Claim 33 depends from claim 32.

Amended claim 32 recites a dual parameter fiber optic sensing system having, among other things, a pair of birefringent optical fibers each having at least one passive  $\pi$ -phase shifted FBG sensor configured to provide a birefringent optical output.

Youngquist discloses a fiber optic sensing array device having a plurality of optical fiber segments 110 coupled to detector 126. At least a portion of the optical fibers comprise fiber-optic sensors. [Col. 6, lines 20-50]. FIG. 6 discloses a pair of optical fiber segments 316, 324, wherein a polarization controller 326 is included in fiber segment 316. Polarization controller 326 adjusts the birefringence of fiber 316. [Col. 12-13 and FIG. 8]. Youngquist fails to disclose pair of birefringent optical fibers each having at least one passive  $\pi$ -phase shifted FBG sensor, as recited in amended claim 32.

For an anticipation rejection under 35 USC § 102 to be appropriate, each and every element or limitation of the rejected claim must be disclosed in a single prior art reference. Because Youngquist does not disclose a fiber optic system having a pair of birefringent optical fibers each having at least one passive  $\pi$ -phase shifted

FBG sensor configured to provide a birefringent optical output, as recited in amended claim 32 of the present application, Youngquist does not anticipate claim 32.

Claim 33 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Youngquist in view of U.S. Patent No. 5,361,130 to Kersey et al. Claim 33, which depends from claim 32, recites that the sensors are configured to operate with substantially different operating wavelengths. The Examiner concedes that Youngquist is silent as to the sensors operating at different wavelengths, but alleges that Kersey discloses this feature.

Applicants submit that the rejection of claim 33 under § 103(a) is improper because Youngquist and Kersey do not teach or suggest each and every limitation of claim 33. More specifically, the combination of Youngquist and Kersey fail to teach or suggest each and every limitation of claim 32, from which claim 33 depends.

As discussed above, Youngquist fails to disclose birefringent optical fibers each having at least one passive  $\pi$ -phase shifted FBG sensor configured to provide a birefringent optical output, as is now recited in amended claim 32. Kersey also fails to disclose passive  $\pi$ -phase shifted FBG sensors configured to provide a birefringent optical output. Rather, Kersey discloses an interferometric apparatus which produces an electrical interference output signal having a phase shift functionally dependent on the wavelength of the return signal. Thus, Kersey fails to supply the deficiencies of Youngquist, and therefore, even if Youngquist and Kersey were combined, the combination does not render claim 32 obvious.

Claim 33 depends from claim 32 and includes additional recitations thereto. Therefore, for at least the reasons discussed above, claim 33 is not obvious in light of the cited prior art. Favorable reconsideration of claims 32 and 33 is respectfully requested.

In view of the foregoing, it is respectfully submitted that pending claims 27-34 and 63-66 and the present application are in condition for allowance, and action to that effect is earnestly solicited.

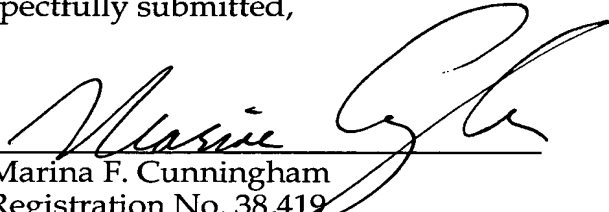
Application No. 10/017,707  
Amendment dated September 27, 2004  
Response to Office Action of April 26, 2004

An Attorney Docket No. 6710-04 was identified on form PTO/90C, which accompanied the Office Action, has since changed. Please associate this file with new Attorney Docket No. 6940-0001.

A check in the amount of \$420.00 is enclosed to cover fees for a two-month extension of time. If any additional fees are due, please charge deposit account no. 13-0235 maintained by Applicants' attorney.

Respectfully submitted,

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